NTSB National Transportation Safety Board

Update re Ongoing Weather Issues In Aviation

Presentation to:

Friends/Partners in Aviation Weather

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Date: August 8, 2012

Challenging Issues

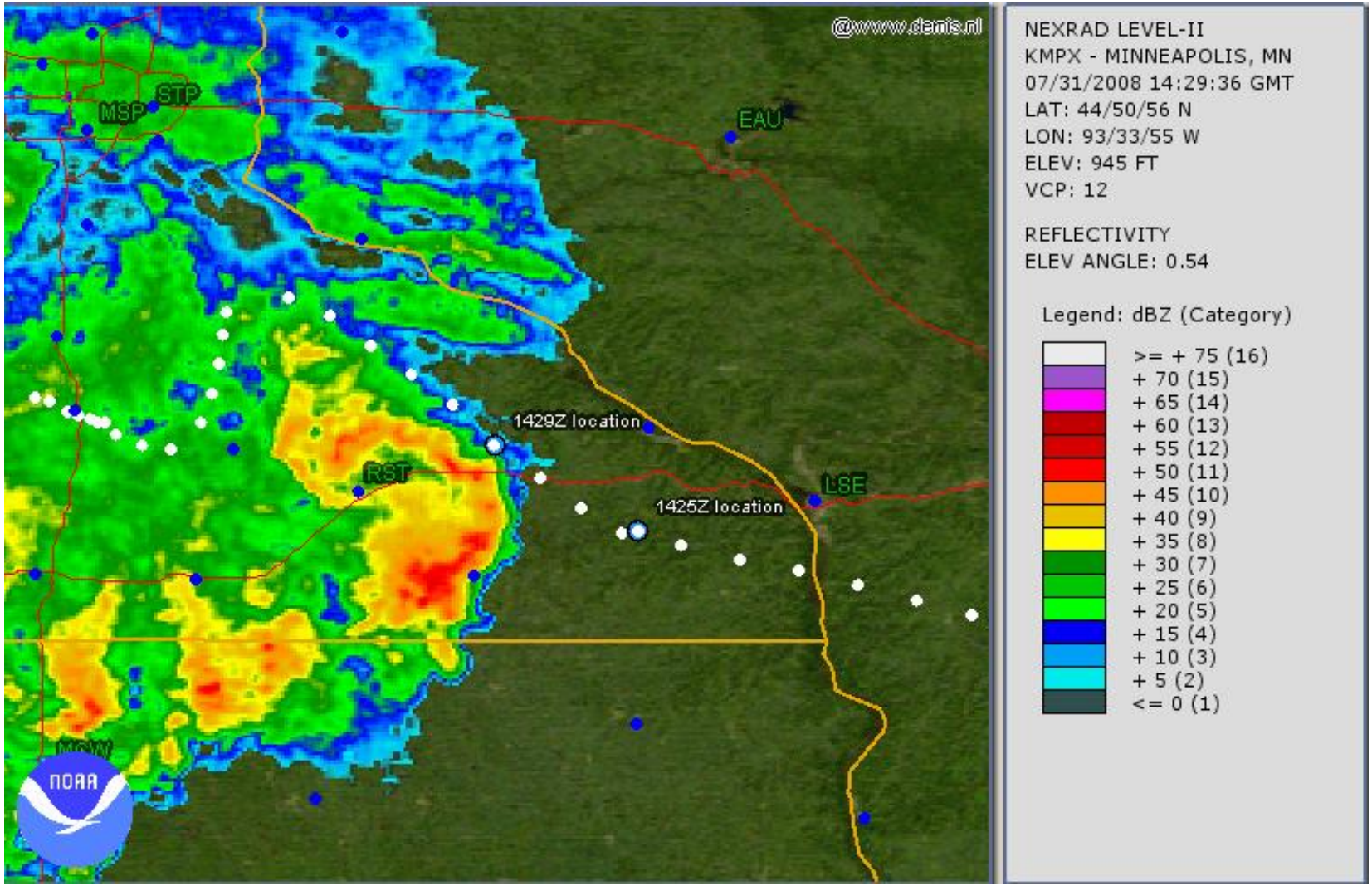
- ***PILOT***
  - **Failed to use available information**

- ***SYSTEM***
  - **Failed to provide available information to pilots**
  - **Failed to generate crucial information for pilots**

Owatonna, MN, July 31, 2008

- Pilots circumnavigated severe thunderstorms after storms had just passed over OWA
- Most recent OWA airport weather info: 20 minutes old
- Runway was
  - Marginal length (5500', elev. 1146')
  - Wet
  - Downhill
- Landed with 8 knot tailwind [$(130/114)^2 = 1.30$]
- Lift dump not engaged until 7 seconds after touchdown
- Attempted go-around

Circumventing Severe Thunderstorms



Unsuccessful Go-Around Attempt

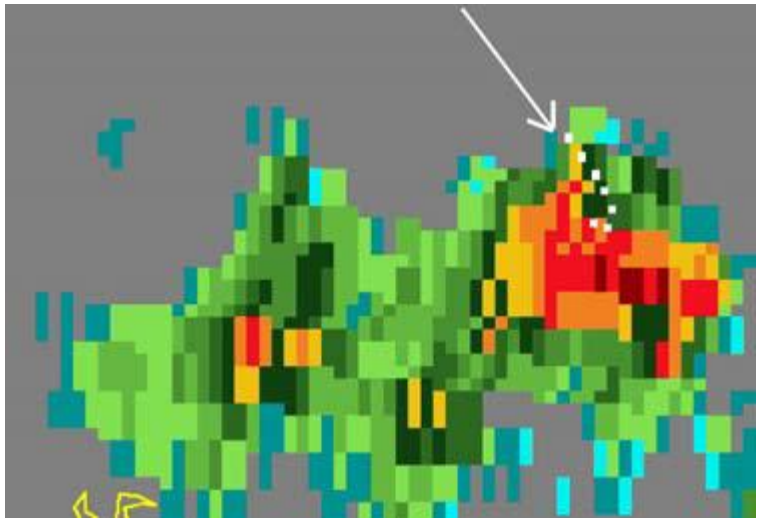
Information Not Provided to Pilots

- **Argyle, FL, 2006**
- **Newellton, LA, 2006**
- **Ludville, GA, 2006**
- **Naples, FL, 2005**

Examples taken from NTSB Safety Alert SA-11, Issued October 2006

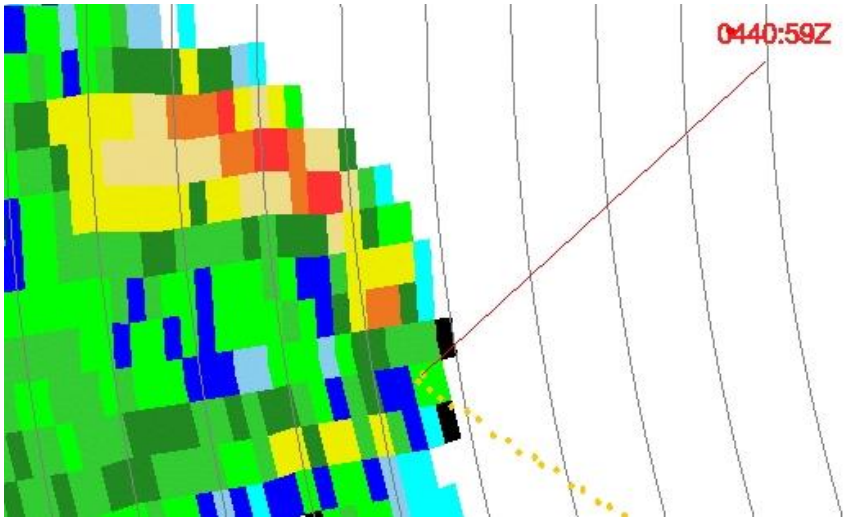
Argyle, FL, 2006

A Mitsubishi MU-2 en route to Panama City, Florida, entered radar-depicted intense to extreme cell. No ATC radar weather information issued or requested. One fatality.



Newellton, LA, 2006

A Mooney M20J encountered an intense to extreme thunderstorm and broke up in flight. No ATC radar weather information provided or requested. Two fatalities.

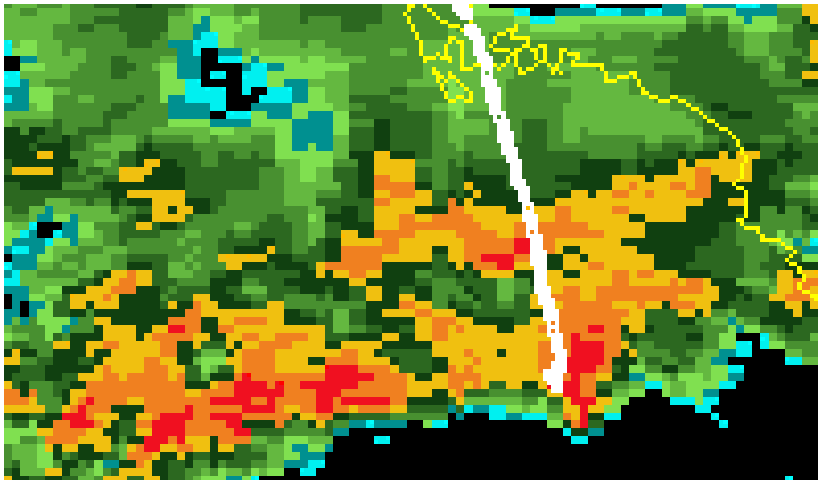


Ludville, GA, 2006

A Cessna 210 en route to Manassas, Virginia, encountered intense to extreme level convective weather. The pilot requested a deviation after entering the area, but lost control of the aircraft and crashed. No ATC weather information provided. One fatality.

Naples, FL, 2005

A Cessna 182 entered an area of severe weather over the Gulf of Mexico. Deviations discussed with ATC, but no intensity information provided by ATC or requested by the pilot. One fatality, aircraft not recovered.



Continental Airlines Flight 1404
DEN, December 20, 2008

- Strong crosswinds, pilots discussed
- Beech 1900 departed immediately prior
- Demonstrated crosswind limit for 737's: 40 knots
- Airline crosswind limit: 33 knots
- ATIS winds: 11 knots; winds given to pilots by controller just before takeoff (source: anemometer at opposite end of runway, more than 2 miles away): 270 deg. @ 27 knots (nearly perpendicular to runway)
- Crosswind gust encountered during takeoff roll: 45 knots

Lateral Runway Excursion

NTSB Recommendation Areas

- Research mountain wave & downslope conditions at airports downwind from mountainous terrain, identify potential mountain-wave related hazards, and disseminate results to pilots & ATC to allow for more informed runway selection decisions
- ATC should provide maximum wind gust information
- Improve LLWAS process and documentation
- Simulator – Gusty crosswind profiles for takeoff and landing
- Aircraft type specific maximum-crosswind takeoff limitation that accounts for wind gusts

Thank You!!!

Questions?